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*Promoting choice and value for
all gas and electricity customers*

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Date: 21 December 2012

Dear Company Secretary,

Project Direction ref: UKPN EPN / Smarter Network Storage / 21 December 2012

Eastern Power Networks plc (part of UK Power Networks and herein referred to as UKPN) submitted the project Smarter Network Storage on 17 August 2012 to be considered for funding through the Low Carbon Networks (LCN) Fund. In this year's decision¹, we selected the project for funding.

We have issued this Project Direction to UKPN. It contains the terms to be followed by UKPN as a condition of Smarter Network Storage receiving funding through the LCN Fund. It must comply with these terms, which can be found in the schedule to this direction.

Project direction

Paragraph 3.77 of Section Two of the LCN Fund Governance Document states that a Project Direction must:

- set out the Project-specific conditions that a distribution network operator (DNO) is committing to in accepting Second Tier Funding²;
- require the DNO to undertake the Project in accordance with the commitments it has made in the Full Submission³. Where appropriate the Project Direction may therefore include extracts from the Full Submission;
- set out the Approved Amount for the Project, as defined in CRC13.28, that will form part of the calculation contained in the direction issued by the Authority under CRC13.16 (the Funding Direction); and
- set out the Project Budget that the DNO must report against and how variances against the Project Budget will be reported and approved.

These are described for Smarter Network Storage in the schedule to this condition.

¹ <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=55&refer=Networks/ElecDist/lcnf/stlcnf/year3>

² Second Tier Funding has the meaning given in CRC13.11.

³ Unless otherwise specified, defined terms (terms in capitals) in this Project Direction are defined in Section seven of the LCN Fund Governance Document.

Decision

Provided UKPN complies with the LCN Fund Governance Document and the schedule to this Project Direction, Smarter Network Storage is deemed to be an Eligible LCN Fund Project⁴.

This Project Direction constitutes notice pursuant to section 49A (Reasons for decisions) of the Electricity Act 1989.

Andrew Burgess

Associate Partner, Transmission and Distribution Policy

For and on behalf of the Authority

⁴ Eligible LCN Fund Project has the meaning given in part G of Charge Restriction Condition (CRC) 13.

Schedule to Project Direction

1. TITLE

Project Direction ref: UKPN EPN / Smarter Network Storage / 21 December 2012

2. PREAMBLE

This Project Direction issued by the Gas and Electricity Markets Authority (the "Authority") to Eastern Power Networks Plc (the "Funding DNO") pursuant to the LCN Fund Governance Document issued pursuant to Part E of Charge Restriction Condition 13 (Low Carbon Networks Fund) ("CRC 13") of the Electricity Distribution Licence (the "Licence") sets out the terms to be followed in relation to Smarter Network Storage project (the "Project") as a condition of it being funded under the Second Tier and Discretionary Funding Mechanism⁵.

Unless otherwise specified, defined terms in this Project Direction are defined in Section Six of the LCN Fund Governance Document.

References to specific sections of the Funding DNO's Full Submission in this Project Direction are, for ease of reference, made by referring to the section number in the Funding DNO's Full Submission pro-forma.

3. Condition Precedent

The Funding DNO will not access any funds from the Project Bank Account until it has signed contracts with the Project Partners named in Table 1.

Table 1 Condition Precedent

AMT-SYBEX
Durham University
IC Consultants Ltd
KiWiPower
National Grid
Pöyry Management Consulting
Smartest Energy
Swanbarton

4. COMPLIANCE

The Funding DNO must comply with CRC 13 and the LCN Fund Governance Document (as may be modified from time to time in accordance with CRC 13 and as modified and/or augmented in respect of the Project by this Project Direction) and the Project Direction.

Any part of the Approved Amount that the Authority determines not to have been spent in accordance with this Project Direction (or the LCN Fund Governance Document) is deemed to be Disallowed Expenditure.

Pursuant to CRC 13.14 Disallowed Expenditure is revenue received (whether by the Funding DNO or another DSP⁶) under the Second Tier and Discretionary Funding Mechanism that the Authority determines not to have been spent in accordance with the provisions of the LCN Fund Governance Document or those of the relevant Project Direction.

⁵ Second Tier and Discretionary Funding Mechanism has the meaning given in CRC 13.3(b).

⁶ As defined in the Licence.

Pursuant to paragraph 3.121 of Section Two of the LCN Fund Governance Document, Disallowed Expenditure includes any funds that must be returned if the Project is halted without Ofgem's⁷ permission, any funds that have not been spent in line with the approved Project Budget contained within the Project Direction, and any unspent funds on the completion of the Project.

5. APPROVED AMOUNT FOR THE PROJECT

The Approved Amount is £13,218k.

6. PROJECT BUDGET

The Project Budget is set out in Annex 1. The Funding DNO must not spend more than 110% of any category total (e.g. "Labour") in Annex 1 without the Authority's prior consent (such consent is not to be unreasonably withheld).

The Funding DNO will report on expenditure against each line under the category total in the Project Budget, and explain any projected variance against each line total in excess of 5% as part of its detailed report which will be provided at least every six months, in accordance with paragraph 3.95 of Section Two of the LCN Fund Governance Document. Ofgem will use the reported expenditure and explanation to assess whether the funding has been spent in accordance with the LCN Fund Governance Document or with this Project Direction.

For the avoidance of doubt this reporting requirement does not change or remove any obligations on the Funding DNO with respect to reporting that are set out in the LCN Fund Governance Document.

7. PROJECT IMPLEMENTATION

The Funding DNO must undertake the Project in accordance with the commitments it has made in the Full Submission approved by the Authority pursuant to the LCN Fund Governance Document and the terms of this Project Direction. These include (but are not limited to) the following:

- (i) undertake the Project in accordance with the description set out in Section 2 (Project Description);
- (ii) provide a DNO Compulsory Contribution of £1,666.74k;
- (iii) a DNO extra contribution of £2,343.26;
- (iv) complete the Project on or before the Project completion date of 30 December 2016; and
- (v) disseminate the learning from the Project at least to the level described in Section 5 (Knowledge Dissemination).

8. REPORTING

Ofgem will issue guidance (as amended from time to time) about the structure and content of the reports required by paragraph 3.95 of Section Two of the LCN Fund Governance Document. The Funding DNO must follow this guidance in preparing the reports required by paragraph 3.95 of Section Two of the LCN Fund Governance Document.

As required by paragraph 3.97 of Section Two of the LCN Fund Governance Document, the Funding DNO must inform the Authority promptly in writing of any event or circumstance likely to affect its ability to deliver the Project as set out in its Full Submission.

9. COST OVERUNS

⁷ Ofgem is the offices of the Gas and Electricity Markets Authority. The terms 'Ofgem' and 'Authority' are used interchangeably in this Project Direction.

The maximum amount of Discretionary Funding that the Funding DNO can request as additional funding for cost overruns on the Project is 5%⁸.

10. INTELLECTUAL PROPERTY RIGHTS (IPR)

In Section 5 (Knowledge Dissemination) the Funding DNO has stated that the Project does conform to the default IPR arrangements set out in Section Five of the LCN Fund Governance Document and must therefore undertake the Project in accordance with the default IPR arrangements.

11. SUCCESSFUL DELIVERY REWARD CRITERIA

The Project will be judged by the Authority for the purposes of the Second Tier Successful Delivery Reward against the Successful Delivery Reward Criteria set out in Table 2⁹ below (that comply with paragraphs 3.27 of Section Two of the LCN Fund Governance Document).

Table 2. Successful Delivery Reward Criteria

Successful Delivery Reward criterion	Evidence
<p>Design & Planning Considerations for large-scale energy storage</p> <p>Successful early capture and dissemination of learning related to the practical issues and consideration in the design and planning of large-scale distribution-connected storage by 1st October 2013.</p>	<ul style="list-style-type: none"> Minutes and notes captured from meetings with local planning authorities and environment agency Planning approval granted at either Leighton Buzzard Primary or an alternative contingency site The final design of the storage facility will be signed off by UK Power Networks Design Review Board A summary report of the key learning and considerations in securing planning at the trial site, and how this impacted designs, will be produced and shared through the project website
<p>Confirmation of the Smart Optimisation & Control System design</p> <p>Successful completion and sign off of the overall design of the Smart Optimisation & Control System by 30th December 2013. The functional design will be developed with operational partners and Durham University, and incorporate the description of business processes to be implemented across participants to facilitate the SNS Solution.</p>	<ul style="list-style-type: none"> Regular meetings held between UK Power Networks, operational partners, Durham University and AMT SYBEX to further develop the full requirements and design, with minutes and notes captured The final design will be signed off by UK Power Networks, including approval by UK Power networks IT Design Authority Board A report describing the final design, optimisation and forecasting algorithms and business processes required will be produced and shared through the project website
<p>Commercial arrangements for integrated use of flexibility</p> <p>The commercial arrangements for the independent service trials and optimised period of operation will be developed and translated into skeleton contract templates by 31st October 2014. These will provide the</p>	<ul style="list-style-type: none"> Meetings will be held between UK Power Networks and the operational partners to discuss and design the necessary arrangements for the service trial demonstrations, with minutes and notes captured Completed commercial arrangements will be signed off by UK Power Networks

⁸ This is the amount requested by the Funding DNO in its Full Submission.

⁹ These are the Successful Delivery Reward Criteria set out in the Funding DNOs Full Submission

<p>basis of commercial arrangements that could be tailored for other forms of flexibility and leveraged system wide by other DNOs.</p> <p>Practical and ongoing experience of the arrangements during the operational periods will be captured and reflected in the project final report (SDRC 9.8), with any recommended changes to these arrangements.</p>	<p>legal counsel for the provision of reserve, response and wholesale market services using the storage</p> <ul style="list-style-type: none"> • Reviews of the commercial arrangements underpinning the service trials will be carried out by UK Power Networks and will be developed into contractual templates for reuse by DNOs and other industry participants and subsequently shared through the project website
<p>Energy Storage as an Asset</p> <p>Successfully commissioned energy storage device, with knowledge developed, captured and disseminated relating to the commissioning and operation by 29th May 2015.</p> <p>The knowledge generated through the early operational experience and training materials will be incorporated, along with methodologies for the asset management and maintenance of storage. A visit to the storage facility will be organised and hosted for interested DNOs and other stakeholders to provide an additional opportunity for dissemination.</p>	<ul style="list-style-type: none"> • Sign off of documentation of the installation, commissioning and test of energy storage device • Training will be undertaken with operational field staff relating to safety and operational procedures of the energy storage device and training materials will be shared through the project website • Meetings will be held with UK Power Networks Asset Management team to establish and design appropriate asset management methodologies for storage. Minutes and notes will be captured and the methodologies and considerations for large-scale storage will be shared through the project website. • At least one visit to the storage facility for DNOs and other stakeholders will be organised and hosted by UK Power Networks
<p>Evolution of Regulatory and Legal Arrangements for energy storage</p> <p>The assessment of market and regulatory considerations in the wider deployment of distribution-connected storage and development of recommendations to facilitate the optimum use of storage and other forms of flexibility. This assessment, incorporating learning captured during the development and operation of trials will be completed by 30th September 2015.</p>	<ul style="list-style-type: none"> • Regular meetings will be held with project partners and other stakeholders to discuss ongoing reviews and amendments to the regulatory frameworks and the impact on energy storage, incorporating EMR, Electricity Balancing SCR and other ongoing developments. Minutes and notes will be captured and stored • Interim reports and or briefing notes may be published to facilitate these meetings • Assuming that the issues identified have not been solved in regulation in the interim period, issue a report detailing the market and regulatory issues affecting storage, the way future developments may impact storage flexibility and possible changes required to regulatory and commercial frameworks will be produced and shared through the project website
<p>Analysis of integrated energy storage contribution to security of supply</p> <p>This criterion relates to the studies undertaken on the contribution of energy storage to security of supply over various</p>	<ul style="list-style-type: none"> • Scenario tests will be designed to demonstrate and assess the storage contribution to network security by Imperial College • Operational data and performance relating to the trials will be captured and

<p>time scales. An emphasis will be placed on quantifying the risks to supply when the network is supported by energy storage with a limited amount of energy, taking also into account that storage may be used to provide other services. This learning will be generated and reported by 29th January 2016</p>	<p>analysed</p> <ul style="list-style-type: none"> Assuming that storage has not been incorporated into the security of supply standards within the Distribution Code in the interim period, a summary report will be produced by Imperial College describing the methodology applied, key assumptions and results of the analysis of the benefits of energy storage to distribution networks and contribution to security of supply, including recommendations for amendments to network design standards
<p>Successful demonstrations of storage value streams</p> <p>The end to end learning from the planning to the operational performance in performing a range of services with the storage facility will captured and shared by 30th March 2016.</p> <p>Both technical data, relating to the impact of the use of the storage on the distribution network, and commercial data, relating to the way in which the service was provided and any economic return for the service will be identified and shared.</p>	<ul style="list-style-type: none"> The detailed trial plans for each storage service, including key requirements and processes required, will be captured through meetings with UK Power Networks and operational partners and shared through the project website The operational data relating to the impact on the distribution network will be collected and stored by Durham University. Any financial performance data will be captured and reported by UK Power Networks A report assessing the capabilities of the storage device in providing the range of services will be produced and shared through the project website, incorporating an assessment of the relative value of services provided
<p>Full Evaluation of the SNS Solution</p> <p>A detailed final project report describing the project findings, knowledge generated and recommendations on the wider roll out of the SNS Solution will be produced by 30th December 2016.</p> <p>The report will be designed to provide sufficient information to:</p> <ul style="list-style-type: none"> Validate and assess which future business models for storage are viable Inform stakeholders on the commercial arrangements and software platforms necessary to enable these business models Inform the ways in which storage can be most economically incorporated into future DNO business plans Assessment of the impact on different future market scenarios on the business cases, including varying carbon prices, high versus low wind penetration and demand side response Compare the performance and value of storage flexibility to other forms of storage Inform the design and structure of future 	<ul style="list-style-type: none"> Lessons learned throughout the project have been captured and recorded and shared through the project website Analysis has been carried out on the business models for storage, and validated with commercial results from operational trials. Comprehensive end of project report developed, incorporating the information above, and shared through the project website and other dissemination channels by 30th December 2016

products or services that storage may provide to DNOs and TSOs	
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The maximum amount of the Second Tier Successful Delivery Reward (which will not exceed the DNO Compulsory Contribution) that the Project will be eligible for is of £1,666.74k

12. USE OF LOGO

The Funding DNO and Project Partners, External Funders and Project Supporters¹⁰ may use the LCN Fund logo for purposes associated with the Project but not use the Ofgem or Ofgem E-Serve logos in any circumstances.

13. AMENDMENT OR REVOCATION

As set out in the LCN Fund Governance Document and this Project Direction, this Project Direction may be amended or revoked under the following circumstances:

- (i) if the Funding DNO considers that there has been a material change in circumstance that requires a change to the Project Direction, and the Authority agrees (paragraph 3.98 of Section Two of the LCN Fund Governance Document); or
- (ii) if Ofgem agrees to provide Discretionary Funding, which requires the re-issue of the Project Direction (paragraph 3.102 of Section Two of the LCN Fund Governance Document); or
- (iii) if the Funding DNO applies for Discretionary Funding to cover a decrease in Direct Benefits and the Authority decides it would be in the best interest of customers to make changes to the Project Direction before the Discretionary Funding would be awarded (paragraph 3.105 of Section Two of the LCN Fund Governance Document).

14. HALTING OF PROJECTS

This Project Direction is subject to the provisions contained in paragraphs 3.107 to 3.111 of Section Two of the LCN Fund Governance Document relating to the halting of projects. By extension, this Project Direction is subject to any decision by the Authority to halt the Project to which this Project Direction relates and to any subsequent relevant Funding Direction issued by the Authority pursuant to CRC 13.16.

In the event of the Authority deciding to halt the Project to which this Project Direction relates, the Authority may issue a statement to the Funding DNO clarifying the effect of that halting decision as regards the status and legal force of the conditions contained in this Direction.

NOW THEREFORE:

In accordance with the powers contained in the LCN Fund Governance Document issued pursuant to Part E of CRC 13 (Low Carbon Networks Fund) of the Licence the Authority hereby issues this Project Direction to the Funding DNO in relation to the Project.

This constitutes notice of reasons for the Authority's decision pursuant to section 49A of the Act.

¹⁰ As listed in Box 1.5 in Section 1 of the Full Submission pro-forma.